

REMARKS

A final Office Action was mailed on July 13, 2004. Claims 1 – 11 are pending in the present application. With this Response, Applicants amend the specification, and amend claims 1 and 3 - 11. No new matter is introduced. Support for the claim amendments may be found, for example, in Applicants' specification at page 19, lines 18 – 24, and at page 20, lines 4 - 10.

OBJECTION TO SPECIFICATION

The specification is objected to at page 5, line 24 through page 9, line 9. Specifically, the Examiner finds that the cited text, in the Summary of the Invention, is overly repetitive of the claims. Applicants amend this text to reduce this repetition, and respectfully request that the objection be withdrawn.

REJECTION UNDER 35 U.S.C. § 112

Claims 3, 6, 8 and 11 are rejected under the second paragraph of 35 U.S.C. § 112 as being indefinite. Specifically, the Examiner questions whether claimed filtering information is being distributed by an autonomous system to itself or to other autonomous systems. Applicants amend claims 3, 6, 8 and 11 to recite that the distribution unit of the border relay device of each autonomous system distributes filtering information to "one of other border relay devices positioned within one of other autonomous systems", to clarify that the distribution is indeed from one autonomous system to another autonomous system. Applicants respectfully submit that amended claims 3, 6, 8 and 11 are definite, and therefore respectfully request that the rejection be withdrawn.

REJECTION UNDER 35 U.S.C. § 102

Claims 1 - 11 are rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent Application No. 2002/0035698 to Malan et al. Applicants amend claims 1, 4, 5, 7, 9 and 10 to further clarify the nature of their invention, and respectfully traverse these rejections.

In independent claim 1, Applicants disclose:

1. An IP communication network system:

comprising a plurality of autonomous systems, configuring IP networks of domains independent of each other, for performing interior- and exterior-forwarding of IP packets,

said plurality of autonomous systems including a plurality of border relay devices positioned at borders between the IP networks,

each of said plurality of border relay devices including:

a discarding unit for discarding, if the IP packet forwarded is an unauthorized intrusion packet, this unauthorized packet when detecting a re-intrusion on the basis of filtering information, having at least one of the destination IP address, protocol type and port number of the unauthorized packet, for detecting the re-intrusion of the unauthorized packet;

a registration processing unit having a monitoring time for detecting the re-intrusion of the unauthorized packet with respect to each of the unauthorized packets and deleting, upon the monitoring time corresponding to the unauthorized packet expiring, the information of the unauthorized packet from the filtering information; and

a distribution unit for distributing the filtering information to all other border relay devices within said same autonomous system.

Malan discloses an Internet (IP) communication systems including a plurality of autonomous zones, between which communications are regulated by border routers (see, e.g.,

FIG. 8 of Malan). As further disclosed by Malan at page 7, paragraph [0106]:

The zones operate autonomously, and share information about both local and remote attacks using the Anomaly Description Protocol. When attacks are detected locally, a zone will propagate the attack to its neighbors using the ADP; this propagation includes the attack's signature which can be used for both detection and blocking. When a zone receives an ADP message from one of its

neighbors, it adds this attack to those the local zone looks for. It is then further propagated to other neighboring zones when it is detected locally. ADP messages are therefore constrained to their appropriate portion of the Internet, allowing for scalability. Moreover, when passing attack information to neighbors, the ADP attempts to aggregate attack information so that multiple attacks that are described with the same aggregate profile, resulting in a single ADP entry.

While Malan's zones provides notice as to a detected attack to neighboring zones by means of an ADP message including a "signature" of the attack, unlike Applicants' invention as claimed in claim 1, Malan fails to disclose that that the zone forwards filtering information having at least one of the destination IP address, protocol type and port number of the unauthorized packet for detecting the re-intrusion of the unauthorized packet (see, e.g., page 19, lines 18 – 24 of Applicants' specification). Applicants' filtering information provides greater detail than the signature provided by Malan's ADP message, thereby making it easier for a neighboring zone to detect the presence of an unauthorized packet.

In addition, unlike Applicants' invention in claim 1, Malan fails to disclose or suggest Applicants' claimed registration processing unit providing a monitoring time for detecting the re-intrusion of the unauthorized packet so that, upon expiration of the monitoring time, information regarding the unauthorized packet is deleted from the filtering information (see, e.g., page 20, lines 4 – 10 of Applicants' specification). Applicants' claimed registration processing unit limits the filtering information to report unauthorized packets with high probability of receipt, thereby reducing the size of the filtering information and associated processing times for the neighboring zones.

For at least these reasons, Applicants respectfully submit that amended independent claim 1 is not anticipated by Malan, and is condition for allowance. As amended independent claims 5, 7 and 10 include limitations that are substantially identical to the above-argued limitations of

Applicants' amended independent claim 1, Applicants respectfully submit that amended independent claims 5, 7 and 10 are also allowable for at least these reasons.

In summary, Applicants respectfully submit that independent claims 1, 5, 7 and 10 are not made obvious by any combination of the cited references, and are therefore allowable. As claims 2 – 4, 5, 8, 9 and 11 each depend from one of allowable claims 1, 5, 7 and 11, Applicants respectfully submit that claims 2 – 4, 5, 8, 9 and 11 are allowable for at least this reason.

CONCLUSION

An earnest effort has been made to be fully responsive to the Examiner's objections. In view of the above amendments and remarks, it is believed that 1 – 11, which include independent claims 1, 5, 7 and 10, and the claims that depend therefrom, stand in condition for allowance. Passage of this case to allowance is earnestly solicited. However, if for any reason the Examiner should consider this application not to be in condition for allowance, he is respectfully requested to telephone the undersigned attorney at the number listed below prior to issuing a further Action.

Respectfully submitted,



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